REMARKS

This amendment responds to the Office Action mailed March 25, 2003. In the Office Action the Examiner rejected claims 13-17 as not being enabled under 35 U.S.C. 112, first paragraph, and rejected claims 13, and 15-17 under 35 U.S.C. 102(b) as anticipated by Mendelsohn et al. (US 5,728,534). After entry of this amendment, the pending claims are claims 13-17.

Applicants have amended claims 13 and 14. In particular, the amended claims relate to a method of identifying a selective estrogen receptor modulator. Support for claims 13 and 14 as amended is provided in the specification as originally filed and also in the substitute specification. Accordingly, no new matter has been added.

THE REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH, SHOULD BE WITHDRAWN

Claims 13-17 are rejected under 35 U.S.C. §112, first paragraph, for alleged failure of the specification to provide enablement for the full scope of the claims. The Examiner contends that the specification fails to provide guidance to enable one skilled in the art to practice the claimed invention. Furthermore, the Examiner contends that the disclosure does not have written description for the large genus of estrogen related markers. The invention as claimed is fully enabled by the instant specification and as such, the rejection under 35 U.S.C. § 112, first paragraph, should be withdrawn.

The claimed invention relates to the identification of compounds that have estrogenic and/or antiestrogenic activity. Contrary to the Examiner's position, the instant application fully enables one of skill in the art to practice the full scope of the claimed invention to identify a selective estrogen receptor modulator (SERM). Applicants respectfully assert that the specification, coupled with the state of the art as of the effective filing date of the instant application, fully enables one of skill in the art to make, use, and practice the invention as claimed without undue experimentation.

The specification, as originally filed, describes the claimed invention as a screening assay for the identification of a SERM based on the ability of that agent to modulate the expression of a variety of ERMs in a variety of cell types, including bone, urogenital, cardiovascular, breast, ovarian, endometrial and central nervous system cells. The specification clearly provides an extensive list of ERMs that may be utilized in the assays of the claimed invention (*see, e.g.*, page 18, lines 1-35; page 19, lines 29-36; page 20, lines 1-7; page 20, lines 14-21; at Example 2, and Table 1). The specification has not only identified each of these markers, including SEQ ID No. 57 (now SEQ ID No. 1, as amended) as being estrogen regulated markers, *i.e.*, the level of expression of these markers is known to be modulated in the presence of a known SERM (*see*, Example 4 of the instant specification), but also provides the structure (*i.e.*, the nucleic acid sequence) of each ERM. Furthermore, the specification provides methods and assays for the identification of additional ERMs to be used in the claimed screening assays (*see*, , *e.g.*, page 8, lines 23-36; page 9, lines 1-15; page 9, lines 16-35; on page 54 in Example 2 of the instant specification).

Thus, the specification clearly describes how to make and use the claimed invention. A specification that discloses at least one method for making and using the claimed invention enables the entire scope of the claims and satisfies the enablement requirement of 35 U.S.C. 112 (see MPEP 2164.01(b) citing *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18,24 (CCPA 1970); *In re Johnson*, 282 F.2d 370, 373, 127 USPQ 216, 219 (CCPA 1960); *In re Hitchings*, 342 F.2d 80, 87, 144 USPQ 637, 643 (CCPA 1965). See also *In re Brana*, 51 F.2d 1560, 1566, 34 USPQ2d 1437, 1441 (Fed. Cir. 1993)). In the instant case, the specification provides not only one embodiment of an ERM that may be used in accordance with the claimed invention, but provides more than 75 examples of ERMs that may be used (*see*, Table 1 of the instant specification).

Applicants contend that the current specification specifically describes various ERM sequences, by both structure and by function, and therefore meets the standard established for adequate written description of sequences by the Federal Circuit. The Examiner, citing *University of California v. Eli Lilly and Co.* (CAFC) 43 USPQ2d 1398 (1997) ("*UC*"), contends that a generic claim to a human or mammalian sequence fails for lack of written description, when only the rat protein sequence is disclosed in the specification. Applicants respectfully contend that this scenario is very different from the present case. In *UC*, the Federal Circuit held that the specification did not provide a proper written description of the cDNA encoding human insulin because no sequence information, indicating which nucleotides constitute human cDNA (of insulin), appears in the patent (*see*

UC at page 7). In the present case, the specification provides the structure and function of over 75 examples of ERMs that may be used in accordance with the claimed assays, clearly meeting the written description requirements under 35 U.S.C § 112, and enabling the full scope of the claimed invention.

The Examiner erroneously contends that the disclosure does not have written description for the large genus of estrogen regulated markers, in particular because the nexus between the orphan protein and its function is lacking. Applicants respectfully contend that the Examiner is in error. Applicants have identified ERMs (including SEQ ID No. 57, now SEQ ID No. 1) based upon experimental evidence that expression of these markers is regulated in response to modulation of the estrogen receptor (*see* page 11, lines 13-21; and Example 2), thereby providing both structural and functional support for the identified ERM sequences. Thus, the specification provides evidence that SEQ ID NO.:57 (now SEQ ID NO.: 1 as amended) is indeed an estrogen regulated marker, and can be used in the assays of the invention in order to identify SERMs. Applicants respectfully point out that the nexus between the sequence and its claimed utility has been provided by the instant application, which must be taken as enabling unless there is reason to doubt the objective truth of the teachings which must be relied on for enabling support. (*In re Marzocchi,* 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971); *In re Brana,* 51 F.3d 1560, 34 USPQ2d 1436 (Fed. Cir. 1995)). In the present case, there is no reason to doubt the teachings of the current specification, and as such, claims 13-17 are fully enabled by the present specification.

For the forgoing reasons, Applicants respectfully request that the rejections under 35 U.S.C. § 112, first paragraph, of claims 13-17 be withdrawn.

THE REJECTIONS UNDER 35 U.S.C. § 102 SHOULD BE WITHDRAWN

The Examiner has rejected claims 13 and 15-17, which are drawn to methods to identify a selective estrogen receptor modulator, as being anticipated by Mendelsohn *et al.* In particular, the Examiner contends that Mendelsohn teaches the screening assays of the instant invention, and thereby anticipates the claims. This rejection is in error for the reasons detailed below and should be withdrawn.

The claimed invention relates to an assay for the identification of a SERM, a selective estrogen responsive modulator, whereby the assay comprises contacting two different cell types expressing an ERM with estrogen and a test agent, and comparing the

expression of the ERM in the absence and the presence of the test agent or estrogen, whereby a difference in expression indicates that the test compound is a SERM. The preferred ERMs for use in the claimed assays are identified for the first time in the instant specification as having ERM properties (e.g., SEQ ID Nos. 1-19). A test agent may be identified as a SERM if it acts to induce or inhibit levels of expression of ERMs as compared to the absence of the test agent.

In contrast, the assay described in Mendelsohn is for the identification of vasoprotective agents based on the ability of a test agent with known estrogen receptor inductive effects to selectively induce levels of non-native reporters responsive to estrogen in vascular cells as compared to non-vascular cells, *e.g.*, cancerous cells, pre-cancerous cells, uterine cells, breast cells and non-vascular non-reproduction cells, without the addition of estrogen. The assays utilize different cell types, however, one cell type must be a vascular cell, in order to compare the effects in vascular cells to non-vascular cells.

Clearly, Mendelsohn does not describe the assays of the invention and cannot anticipate the invention as claimed. Applicants respectfully point out that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Furthermore, "the identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). Applicants point out that the Mendelsohn reference does not satisfy the requirements for anticipation as set forth by the Federal Circuit.

In brief, Applicants' invention relates to methods for identifying selective estrogen receptor modulators comprising contacting at least two cells and determining the levels of at least one estrogen-regulated marker in the cells in comparison with the levels of expression of the estrogen-regulated marker(s) in cells following contact with estrogen. Nowhere in Mendelsohn is such an embodiment ever described or suggested. Mendelsohn is solely limited to the identification of vascular specific effects of agents with known estrogen receptor inductive properties. In summary, Mendelsohn does not set forth "each and every element as set forth in the claim." As such, the Mendelsohn reference cannot form the proper basis of a rejection of the present claims under 35 U.S.C. 102(b).

Applicants respectfully request that, for the forgoing reasons, the rejection of claims 13 and 14-17 be withdrawn.

CONCLUSION

Applicants respectfully request that the amendments and remarks of the present response be entered and made of record in the instant application. Withdrawal of the Examiner's rejections and an allowance of the application are earnestly requested. If any issues remain in connection herewith, the Examiner is respectfully invited to telephone the undersigned at (212) 790-9090, if a telephone call could help resolve any remaining items.

Date: July 25, 2003

Respectfully submitted, 35,203

Anthony M. Insogna

Anthony M. Insogna (Reg. No.)
PENNIE & EDMONDS LLP
1155 Avenue of the Americas
New York, NY 10036
(212) 790-9090

by Jacqueline Benn
Reg No. 43,492